

Amendments to the Specification:

Please replace paragraph 09 with the following amended paragraph:

Fig. 1 is a simplified block diagram of a prior art MIMO TCM encoder 10. TCM encoder 10 includes a serial-to-parallel converter 12, a convolutional encoder 14, a symbol mapper 16 and a serial-to-parallel converter 18. The MIMO system (not shown) of which MIMO TCM encoder 10 is a part, includes M_t transmit antennas and M_r receive antennas (not shown). The channel through which the data encoded by TCM encoder 10 is transmitted is characterized by the complex matrix \mathbf{H} having the dimensions of $[[M_t \times M_r]]M_r \times M_t$. The channel is assumed to be an AWGN channel. Convolutional encoder 14 in conjunction with symbol mapper $[[14]]16$ performs the TCM encoding.

Please replace paragraph 27 with the following amended paragraph:

Fig. 3 is a simplified block diagram of a MIMO TCM encoder 100, in accordance with one embodiment of the present invention. MIMO TCM encoder 100 includes, in part, a serial-to-parallel converter 102, a convolutional encoder 104, a symbol mapper 106, a serial-to-parallel converter 108, and a coordinate swapper 110. Data supplied by coordinate swapper 110 is transmitted by at least two transmit antennas (not shown) and received by M_r receive antennas (not shown). The channel through which the data encoded by TCM encoder 100 is transmitted is characterized by the complex matrix \mathbf{H} having the dimensions of $[[M_t \times M_r]]M_r \times M_t$. In the following description of MIMO TCM encoder 100, it is assumed that M_t is equal to two. It is understood, however, that the present invention applies to MIMO TCM encoders having more than two transmit antennas.